JAN 22 1929

PHILOSOPHICAL REVIEW
GENERAL LIBRARY
UNIV. OF MICH.

THE JOURNAL OF PHILOSOPHY

VOL. XXVI. NO. 2: JANUARY 17, 1929

CONTENTS

A Behaviorist Account of Consciousness. I: ORLAND O. NORRIS. 29

The End of a Great Legend: F. C. S. SCHILLER..... 43

Book Reviews:

MacCurdy's Common Principles in Psychology and Physiology: H. L. HOLLINGWORTH 47

Basch's Essai Critique sur l'Esthetique de Kant: C. J. DUCASSE..... 50

Troland's The Fundamentals of Human Motivation: WM. CLARK TROW.. 53

Journals and New Books..... 55

Notes and News..... 56

PUBLISHED FORTNIGHTLY
BY THE
JOURNAL OF PHILOSOPHY, INC.

THE JOURNAL OF PHILOSOPHY

All communications to the Editors should be addressed to Professor FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, or Professor HERBERT W. SCHNEIDER, Columbia University, New York.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY, 515 West 116th Street, New York. The annual subscription price (twenty-six numbers) is $4.00 and the charge for single numbers is 20 cents. Advertising rates will be forwarded on application.

THE JOURNAL OF PHILOSOPHY is owned by The Journal of Philosophy, Inc., 515 West 116th Street, New York, and published at Lancaster, Pa.: President, Wendell T. Bush; Vice-President, Herbert W. Schneider; Treasurer, Frederick J. E. Woodbridge; Secretary, Iris W. Wilder.

Entered as second class matter, March 18, 1921, at the Post Office at Lancaster, Pa., under Act of Congress of March 3, 1879.

By FRANK C. SHARP, PH.D.

ETHICS

The first volume in *The Century Philosophy Series*, of which Sterling P. Lamprecht, Ph.D., Professor of Philosophy at Amherst College, is the General Editor. It is admirably designed to serve as a text-book in introductory courses in Ethics. Its interesting and lucid style and its wealth of illustrative material are noteworthy features.

Price $3.50

THE CENTURY CO.
353 Fourth Ave., New York
2126 Prairie Ave., Chicago

STUDIES *in the* HISTORY *of* IDEAS

VOLUME II.

Containing essays by John Dewey, M. T. McClure, Irwin Edman, A. G. A. Balz, W. F. Cooley, J. H. Randall, Jr., S. P. Lamprecht, H. L. Friess, W. P. Montague, H. W. Schneider, W. T. Bush, Helen H. Parkhurst.

Price $3.00

Columbia University Press
2960 BROADWAY N. Y. C.

Vol. XXVI, No. 2. January 17, 1929

THE JOURNAL OF PHILOSOPHY

A BEHAVIORIST ACCOUNT OF CONSCIOUSNESS. I

The Awareness Aspect of It

I

IT seems generally to be taken for granted that no behaviorist account can be given of consciousness, and most especially of the "qualitative" aspects of consciousness, which are often designated as "conscious qualities." The simon-pure behaviorist, it is supposed, must either deny consciousness altogether or simply ignore it. It is not supposed that a lineal intellectual descendant of Hobbes and Hume, an intellectual liver of the physicist's metaphysical tradition of "matter and motion," can give us either an intelligent, or an intelligible, or a valid account of this most elusive of psychological and metaphysical subject-matters. On the other hand, if there be found to-day any such persons, of these it is probably only an irrepressible and incorrigible behaviorist that would be so naïve as to presume to undertake this age-old task in terms of that tradition. And when we add to his materialistic naïveté his reputed "religious" impulsions as a psychological sectarian—defensively imputed to him by other psychological sectarians, perhaps we should be ready to expect of him any foolhardy attempt. At any rate, I am not unaware of the sort of reactions that the mere title of this paper will evoke, most especially as I myself have lived quite the entire gamut of the opposition.

Our task, then, is to give a behaviorist definition of consciousness; not a definition of the word, but of the thing or process designated by the word—a very different matter. We are to define the range of facts to which the term designatively and descriptively applies. The nature of the task will be clearer if I first call specific attention to two types of definition.

First, there is the verbal definition—of other words. This is a verbal reaction to other words, perhaps parroted from a dictionary or other "authority." And that authority had perhaps poorly isolated and determined the locus and pattern of the stimulus events to which his newly coined or appropriated word was a response. This is one kind of fact that necessitates continually new definitions—of the situation to which the word was a designative and descriptive response. Another kind of fact necessitating new definitions is that new patterns of other than verbal reaction are now and again de-

veloped for that original situation, which makes its verbal designate take on correspondingly different meanings. These two kinds of fact are responsible for growth of our scientific tradition. Scientifically, words have two-way meanings. They mean the antecedent or stimulus-patterns for which they substitutionally serve as means of social communication and personal thought. They also mean the patterns of sequential, adaptive behavior which those things elicit and mean. But the popular, verbal tradition outruns the scientific. It is more facile, less specific, and tends to lose all recognizable association with its generative situations, just as do religious practice and ritual. Worse still, this is imputed to tradition as a virtue, as a sign of "progress." It would better be imputed to ignorance, haste, and laziness.

One who gets his knowledge by way of verbal definition more or less blindly and unwittingly tries to make his definitions generate the same patterns of behavior, the same experience—save reception of the original stimulus-pattern, as did the original situation for his "authority." But he has no way of testing whether or not he succeeds, and he is not nearly so successful as he might be if he knew that just this was his real task. In fact, he not infrequently is careless of what the word properly means in terms of reference to the original situation, for which it is a substitute or symbol. It is not unusual, as in ritual and religious symbolism, for men to employ the symbol as an original situation and to engage in seeking what new experiences they may make it evoke or mean. This has been a very characteristic way of treating words. I once had a student who was looking forward to the ministry as a profession, because he had found himself clever in "perceiving new meanings" for words. Persons devoted to this kind of behavior often refuse to be interested in the original pattern of situation for which the word or other symbol substitutionally stands. For them, "origin does not affect validity." But knowledge of origins may affect emotional congruity in their use of certain words, which congruity is taken as test of the appositeness of reference of these words. This is to treat the word as an original situation, not really as a symbol or substitute stimulus; and thus it is to make it cease from being a real means of intelligible communication. It is a fact that words do mean the reactions that they evoke, as do other patterned objects. But the only way in which they can mean these as means of real communication is by meaning, first of all, respectively common-patterned situations and consequently common-patterned reactions for all the communicants. Hence if we are to control the use of the original word in the proper interest of really social communication and understanding we must assure that both the word itself and its verbal definitions shall have a common-patterned situation or point of departure for all. Of

course, this common point of departure can not be identically patterned for all, but it can come within the limits of a statistical homology.

This means that our real task of definition must be one of better and better isolating, delimiting, and describing the pattern of that original situation to which the original word serves as a socially designative and communicative response. The ever-widening stream of traditional usage of the word, more or less abstracted from concern for a better isolating and defining of the pattern of its original and proper designate, may be carrying us farther and farther from its proper meaning. It properly means situations of the pattern of its original designate, and the various adaptive and descriptive reactions that we have developed for situations of that kind. It does not mean a string of words and emotional reactions prompted by itself as an original situation.

In science we are constantly trying to determine more precisely the pre-verbal situation which the word is employed to designate. Here our scientific definitions are verbal reactions descriptive of various aspects of that same original situation, or of others of its pattern. Our technological definitions are in like manner descriptive of the adaptive reactions found appropriate to such situation-patterns. Thus in relation to the processal or temporal flow of experience, words as reaction details with the value of ideas are Janus-faced things, as Dewey has said, with two sets of meanings. First, are antecedent meanings, or situation-patterns meant; second, sequential meanings, or adaptive reactions meant. Scientific meanings are of the former class; the latter are technological. Both may be preëminently intellectual—preëminently functions of the projicient apparatus, though, of course, sustained by autonomic strains or tensions. But both may also be primarily functions of the autonomic apparatus; in which case the chief intellectual work involved is that of perceiving the correct patterns of the words used, and patterns of the situation upon which their use is contingent, so that the appropriate emotional reactions will be evoked. There is an emotional technology as well as a scientific. This we find in the work of the high-powered salesman, the political demagogue, the platform orator, the pulpiteer. Here the technique aimed at is that of the control of men—the undemocratic interpretation of "leadership," so commonly insisted upon today as an educational objective for the few. A technology of the control of men is the most undemocratic of things, and there is need that men should have revealed to them its real nature. The consumer as well as the salesman should know the "psychology of salesmanship," for his own protection and for the sake of real democracy. The really democratic leader is the man who leads the field in his own special type of endeavor, chiefly

because of his own better technique. His leadership properly consists in showing others the way to their improvement in his kind of technique. The loud-mouthed emotionalist and authoritarian is not a leader of men, but of supposed sheep. His leadership is calculated to make men not less but more sheep-like; to make them not less but more dependent upon him and his kind as sources of stimulation and control of their behavior. As M. P. Follett has well said, democratic social control is a control exercised *with* others, not a control exercised *over* others.

Some may hold that this is to hold our words to too narrow a range of application. The obvious answer is that if such persons feel such limitation, they should either coin or appropriate from other language sources the words necessary to serve as genetic and adaptive designations of the differences that they have discriminated. Laziness or ineptitude is not a sufficient screen for refusal to find the word or phrase necessary or adequate to our purpose. There is here no intention of limiting experience, or of explaining it away. Let it be as rich as may be, with regard to the welfare of the race. But let not the emotional reactions generated by our words as original situations be either mistaken for knowledge or palmed off upon people as such.

Thus is indicated the point of departure from which I propose to attempt a definition of that weasly word, consciousness, and its designate. I am aware that such attempt will at first evoke such intended opprobrious reactions as "etymologizing" and "origin does not affect validity." Nevertheless, I am ready for the venture, having already followed it through to a conclusion that seems to me both significant and valid. It is to be remembered that I am not really undertaking to define this word, but its proper designate and hence the sphere of its appropriate application.

II

By any definition of this word—or its designate—that I have ever seen, its designate was described as being non-material, non-physical, non-ponderable, inefficacious, and therefore not subject to scientific investigation. On this score that supposed designate could not even be designated, as designation itself is here postulated to be an act of response to a stimulus. But we have the word, which is *prima facie* evidence that there was something "there"—material, physical, ponderable, efficacious—to which as stimulus this word was seized upon as a significant response. It is this something that we are after. I believe it can be found and made intelligible. If this belief be justified in the outcome, some interesting positive conclusions may be expected to follow for the metaphysics of the physical sciences; some negative ones, also, for metaphysics in general and

for psychological theory; most especially when I have defined "conscious quality."

The most significant moment in the history or use of a word is the moment of its coining, compounding, appropriation, or selection as a designation for some newly isolated item of experience. In the case of words as old as our historical psychological rubrics, it might at first appear that we could not recover the experience of their origination. But with words borrowed from other languages, and especially with words compounded of either alien or native elements, the case is not so strange as it might seem. If we can but know the meanings of these words and elements at the time of this newly initiated use, we find ticketed upon them, in their mere forms as words, significant tokens of the initiator's experience and intention. It is one thing to search for an appropriate language designation for a newly individuated type or pattern of stimulus. It is a far less specific bit of behavior, given this word as historically established in the language, to try to conclude upon the exact stimulus-pattern that evoked it, unless we take account of such tokens, explicit in the form of the word. Consciousness is a splendid word upon which to try out this hypothesis.

"Conscious" is English for the Latin *conscius,* a word compounded of *con-* (with, together with) and *scius,* a derivative from the root of the verb *scire* (to know). This word *conscius* is used both as an adjective—its original use—and as a noun. As an adjective it has quite the value of a present participle (knowing with, knowing together with, concomitantly knowing). As such, it refers, of course, to a subject, but most especially to an object—a thing, or things which the subject or agent *knows along with* his doing something else. To be *conscius* of doing wrong is not only to be doing the wrong, but also to be knowing tokens of its wrongness. As a noun the word means an ally, confederate, accomplice; that is, one who is "knowing" or "in the knowing" along with others (one knowing concomitantly with others).

But *conscius* has no impersonal or abstract nominal form. Instead, the language exhibits the word *conscientia,* formed directly from the present participle of *conscire.* Apparently, this form was in the first instance a neuter plural of the participle, in the sense of a plural gerund (knowings along with, concomitant knowings). Thence it became "an attendant, accompanying, or concomitant knowing." This word became our "conscience." The thing that the old Roman coiner or appropriator of the word in this sense intended to designate was that performance of an act was accompanied by attendant knowings of its traditional goodness or badness, and hence that the doer was responsible for consequences. If we had retained this apparently original sense of the word, as "a knowing that ac-

companies'' an act, conscience would not have become reified as an animistic entity, to the great confusion of thought.

So it was with this same word in the sense of our word ''consciousness.'' The original coiner or compounder or appropriator of the word for this purpose employed it to designate the fact that in his own experience he had isolated and discovered facts of knowing concomitant with or supervening upon his primary or major acts. He thus signified, first, not only that an agent acted—adaptively, let us say—but that he knew that he was acting. In other words, at the same time with a central or primordial act he found himself cognizant of one or other detail of this act. Or again, he was ''conscious'' of his act. Second, he meant to signify not only that he was acting within a given situation, but also that he was cognizant of other details of the situation than the one to which he was directly responding. That is, the concomitant knowings constituting consciousness may be either of the reaction being made or of details of the situation within which the reaction is performed. This, of course, is a more sophisticated report of his experience than that originator of the word could have made, but I believe it is essentially correct. Here, again, if we had retained the original sense of our word ''consciousness,'' as this is still signified by its form, we should not have hypostatized the process itself as being a more or less anthropomorphic, animistic entity.

III

It may now be asked just what is meant here by ''knowing,'' both in the primary sense of direct adaptation and in that of the incidental details of cognizance that constitute consciousness. We may distinguish two elementary and correlative kinds of ''knowing'': ''knowing how'' to react to presented stimulus-patterns and ''knowing that'' a given stimulus-pattern is present. Genetically, we act first and then learn to discriminate our stimulus-patterns, which discrimination in turn requires more highly discriminative end-responses or adaptations. Stimulus-patterns are just what they are, and our actual receptors are mechanically tuned to their respective kinds, or frequency ranges. But accessory apparatus serves to bring these receptors to bear more directly upon their stimuli, as in focusing the eyes, adjusting the ears by turning the head, and moving the hands in search of tactual and temperature stimuli. Genetically, the primary level of knowing consists in direct, unmediated reactions: first, of the somatic, projicient, adaptive structures; second, of the accessory apparatus, in individuating the spatial characteristics, especially, of stimulus sources. As being direct, mechanical, or automatic reactions, these are not properly classed as ''knowing''

reactions, but they constitute the elementary level of a genetic series in whose higher levels real knowing is exhibited.

Traditionally, because of the authoritarian organization of the home and other social institutions, a strong emphasis has been placed upon the known and customary patterns of adaptive behavior, and hence upon a maintenance of the kinds of situation evoking them. Hence the historical interest in morals and ethics, primarily an interest in established ways of behaving as such, and betraying a fear of consequences of non-customary behavior. The interest in the customary and this fear of the unfamiliar led to the development of the most powerful possible of sanctions for the established ways. Hence the formation of creeds and constitutions, and the cultivated reverence for their more or less mythical or mythicized founders. All this is genetically related to the childish interest in the "Why" or "What's that for," and to the cultivated childish fear as a means of social control. It is a socially retained childish interest; in other words, it is an exhibition of both infantilism and primitivism. It reflects a racial level and a personal status when the individual is not able to develop objectives of his own and thence to inquire about the "How" or technique of achieving them. He can ask only about the antecedents of action, in order to effect an adaptation to these. He can face the future only by looking backwards. It is only when the race and the individual can face the future under guidance of objectives to be won that they can "Abjure the *Why* and seek the *How.*"

Traditionally, also, because of the particularist, socially abstracted, leisure-class situations out of which our later developed intellectual tradition emerged, an emphasis has been placed upon knowledge of stimulus-patterns as such. We became interested in the "what," and endeavored to translate it into a known "that." Thus originated our intellectualistic, verbalistic metaphysics. The interest here has been chiefly an interest in sensory and imaginal "content," an interest in the action of the receptors, especially visual, and largely a mistaking of imagery for ideas. Hence the Platonic metaphysic of "ideas," and the Aristotelian metaphysic of "form," suggested in the first instance by Socrates, who had been a sculptor and wont to guide his artistic behavior by a focusing of his eyes for seeing the form to be executed. This historically prolonged leisure-class metaphysical interest has drawn a red herring across the trail of intellectual endeavor, so that even our physicists and physiologists still talk in some measure the old metaphysical lingo, especially regarding "sensation" and "consciousness," in the traditional sense of these terms, as designating "qualitative" factors of experience.

First, then, and genetically, knowing consists in explicitly react-

ing to stimuli. In this sense of the word, a baby at birth already "knows how" to grasp, even though it does not know how to individuate its stimulus-patterns, so as to control or adapt its grasping. Ability to do what it does consists in the fact of having reaction-structures already organized, through which the reactions are effected. In such cases a given set of effector structures may be nervously linked up with various sets of receptor structures, through conditioning, so that a reaction of a given pattern may be evoked by stimulation of a number of different receptors, and even by differently patterned stimuli of each. That is, a given efferent arc may have engrafted upon it a number of afferent arcs, involving different receptor organs, and even different patterns of anatomical units of each. In a similar way a number of efferent arcs may be connected with a given afferent arc, so that a given stimulus-pattern may evoke reactions of a number of patterns. But the child does not yet know *that* it has been stimulated, nor *that* it has reacted. To do this it must be able to designate these two sets of facts; which means to make reactions substitutional for the primary reactions that each kind of stimulus would evoke, and socially communicative regarding them—a matter of conditioning. The higher levels of reactions of such a genetic series as we are here considering are reactions of the same effector structures, respectively, as those involved in the basic level: first, in explicit response to substitutes for their original stimulus-patterns; second, in implicit response to either original or substitute stimuli.

We may now note the second level. As the child automatically, reflexly learns to focus or adjust his receptors for the more highly discriminated stimulus-patterns to which correlative adaptations may be made, he becomes able to designate these patterns; and when he individuates such patterns, but has not yet learned the socially acceptable designation, he demands to know this; he asks, "What's that?" Explicitly employing discriminative designations constitutes the second level of "knowing that." It is out of this infantile interest, as I have said, that our traditional metaphysics has developed. The metaphysician has not been content merely to know *that* he has been stimulated by a particular pattern; he wants to know what the "that" is in the peculiar interpretation that he has made of it. Hence the historical problems of "consciousness" and its "qualities," problems that must be solved before philosophy can discern its true job, freed from these historically false problems.

"Knowing how," also, is exhibited on a second level. Here it consists in designating the reaction-patterns respectively learned as being appropriate to discriminated stimulus-patterns. Ability to discriminate reaction patterns is first of all an ability to trace them objectively like physical objects, against the background of the ob-

jective situation. Second, it is ability to refer them to patterns of subjective stress and strain in relation to the now learned spatial patterns of the body in its various postures. This ability is improved through a correlative demand upon society; the subject now asks, "What's that for?" His query is directed towards knowing the adaptive reactions socially accepted as appropriate to his newly discriminated stimulus-patterns. Out of this interest is developed our interest in techniques as such, especially those of custom, tradition, institutionalism—still a childish interest. On the one side is the authoritarian, still fearful of the consequences of unfamiliar modes of behavior upon his stock-in-trade, endeavoring to maintain the kinds of situation upon which customary behavior is conditioned, and hence trying to make himself necessary as a means of information regarding the approved modes of behavior in relation to these situations. The young, subjected to this kind of treatment, are trained to acquiesce in this infantile dependency and thus to perpetuate the need of authoritarianism—a vicious cycle of infantilism.

Thus far the child's "knowing" behavior is explicit. But concomitantly with improvement in this has gone on an increasing ability to inhibit overt action and to perform both designative and adaptive behavior implicitly. This introvertive but tremendously economical step is a result of social pressure, in its vicious aspects genetically imposed by taboos. This plane of implicit behavior is the plane of thought proper, consisting in implicit rehearsal of explicit behavior, and now taking precedence over explicit behavior and guiding it. It is still further economical in that not only may the major act of the moment be performed implicitly, so as to determine its implications for explicit enactment, but reception of other stimuli may go on, and even more highly implicit or attenuated reactions be made to them. It is these concomitant implicit reactions, of discriminating more or less relevant stimuli during the progress of the major act, that constitute consciousness.

The central act of the moment, whether explicit or implicit, is not itself a content of consciousness. We may be conscious of, or regarding, it; it is not itself a detail but a condition of consciousness. The details of consciousness are details of knowing *that* stimuli of such and such patterns are playing upon us, or within us, and this knowing consists in designating implicitly—and hence to or within ourselves—that these stimulus-patterns are present.

It may be asked just specifically what can be meant by indicating "to or within ourselves." For answer to this question I propose, first, that every reaction-structure is "objective" to every other and that, in general, reaction of any one—especially of the projicient apparatus—may serve as stimulus to any other. It seems to be

upon such a basis as this that introspection is possible; in fact, this seems to suggest the real nature of introspection. This means that introspection, rightly carried on as a means of psychological analysis, is an effort to individuate bodily internal stimulus-patterns, objective to the designative apparatus. Second, I suggest that the chief reactions constituting consciousness are those of the language or speech apparatus, as these implicitly report or designate the stimulus-patterns that are being discriminated. The discriminations that will be made are not primarily determined by the stimuli themselves, nor by the receptors, but by the segment of effector apparatus that is tonically ascendant, demanding the stimulus that will neutralize its tonus; in other words, by the "mental set" of the moment.

Third, I suggest that there must be such a nervous connection between the speech apparatus and the ear that we implicitly or imaginatively hear ourselves speak, whence this hearing itself can serve as stimulus to further reactions. This implies that there must be centrifugal or efferent axons leading out to the auditory apparatus, and in synaptic connection there with afferent neurons, as well as afferent or centripetal ones leading from the ear to the brain. I have as yet seen no anatomical evidence of such an arrangement, nor has there been any motive for our anatomists' looking for such. But there does seem to be such an arrangement in the eye, as the diagrammatic drawing in Ranson's *Anatomy of the Nervous System*, Figure 160, intentionally shows.[1]

It is possibly difference in numbers and development of these efferent fibers that is responsible for individual differences in ability

[1] The existence of efferent fibers in the optic nerve has been anatomically demonstrated for all vertebrates (Leslie B. Arey, "The Functions of the Efferent Fibers of the Optic Nerve in Fishes," *Journal of Comparative Neurology*, XXVI, 213–245; J. B. Johnston, *The Nervous System of Vertebrates*, Phila., 1906, p. 265). Moreover, light produces actual movements of pigment cells and of rods and cones in the retina, (Arey, "Movements in the Visual Cells and Retinal Pigment of the Lower Vertebrates," *ibid.*, 121–201). In the cases of fishes and birds, the rods lengthen and the cones shorten in response to light, the cones showing the greater response (*ibid.*, 183–187).

But not only does light have this effect. Apparently faradic stimulation of these efferent elements produces some sort of similar retinal response. Arey tends to discount such a notion (p. 236), but the data supporting both sides of the dispute were secured from excised eyes, upon which no "demand," either autonomic or projicient, could be made, so that such a stimulus could be relied upon to complete a circuit and so facilitate the setting up of a current. Had he seen his problem from a different angle, he might have found data which he failed to find with the one he had. If currents initiated in different receptors could induce movements of the rods and cones homologous with those produced by light of different mixtures and ranges, so that differential action of the speech mechanisms, acting in substitution for the sources of this light, could also produce retinal responses homologous with those of light combinations, we should have a complete mechanism for colored imagery.

to experience colored imagery; and possibly a similar situation prevails in the auditory apparatus. I certainly seem to hear myself speak subvocally; it is my own voice, and no other, that I seem to hear. This means—to me—not only that my auditory apparatus may be stimulated by even implicit reactions of my speech apparatus, but that auricular reception of such stimulations may in turn stimulate my speech apparatus to report the fact, as well as evoke other adaptive reactions. It may be that I can not distinguish what these other reactions are, or even that they occur, which merely means that they do not evoke further items of response—chiefly vocal—as consciousness. For them to do so would only interfere with the business of the moment. Some one may raise the objection that this would result in an infinite regression. But temporally, processally, such a regression is really a progression, and there are always events occurring to prevent its carrying out to an infinity. Apparently our chief studies of the efferent fibers of the optic "nerve" have been made upon sections from lower animals. On account of the different part that both vocal and sub-vocal behavior plays in human life, we should hardly expect to be satisfied, in the case of hearing, with data secured from study of the acoustic apparatus of lower animals.

Perhaps in the first instance the function of the neurones was that of bringing about adjustments of the retinal elements apposite to organismic demands that were satisfied through vision, so that stimulation was facilitated. From that there may have been a progression to the point where such organismic conditions, autonomic or projicient, could bring about retinal conditions actually but faintly substitutional for those that would prevail in the case of light stimuli themselves. This would be a phylogenetic account of the way in which colored imagery has become possible.

IV

It will be seen from the foregoing that I can find no place for a conception of consciousness as consisting of sensations, sensa, qualia, data, or essences occurring at synapses of the cortex. By current definitions of these rubrics, their designates could not serve as stimuli to evoke even designating responses. The descriptive or defining responses that are thus made are responses to stimuli; they are not spontaneous, that is certain. But these stimuli certainly do not occur in the brain, but in receptors. The only reason for assigning sensations to the cortex is that we had on our hands both these qualia and the cortex, as things to be explained. We did not know what to make of either and hence associated them in this way. We have been like the man with the dog that was good for nothing else

and that therefore must be good for hunting coon. But there is another way of disposing of these qualia, as we shall see later.

Consciousness, then, is constituted of acts, not of sensations or qualities. Its constituent acts are acts implicit, and substitutional for acts of direct adaptation; they are preëminently acts of designating stimulus-patterns received, to which adaptive reaction might have been made, and which may become the source and occasion of either implicit or explicit adaptation. In other words, these supervening knowings that constitute consciousness are knowings *that* such and such stimulus-patterns are occurring, among which the agent may pick and select in the guidance of that space-time course of existence or behavior which he is.

Consciousness thus has efficacy. In ultimate analysis it is as physical as any other kind of act or existence. Instead of being a persistent existential entity, it consists in a kind of events or reactions occurring in the course of a process—the more pervasive organismic process of maintaining or effecting an adaptation.

Thus the word "consciousness," instead of designating an existential entity, is the generalizing, combination response by which we designate the items of behavior by which an organism presents itself with incidental data regarding present reaction and current environment. The data of consciousness, the cues to behavior given in or by consciousness, are stimulus-patterns for which the organism possesses already organized structures of adaptation, and to which it may turn from those upon which it is at any moment engaged. These stimulus-patterns are mutually different, either spatially or temporally, or even both at once. It is by virtue of these differences that they may be differentiated and hence picked and selected among. Consciousness is thus at once an exhibition of intelligence and a condition of a more highly intelligent behavior. It raises intelligence to a higher power. Consciousness, like intelligence, grows with increasing range of experience.

We may recognize such a thing as consciousness of consciousness. This consists in an occasional succession of knowings supervening upon selected details of the consciousness attending the primary business of the moment. But when this happens, that primary occupation has lapsed from attention, and details of the consciousness attending it have usurped its place. This is how acts of introspection begin. But introspection is not an analysis of consciousness as such. It is a matter of seeking the differential reaction appropriate to implicit reactions as stimuli—now as the central object of attention, and of seeking to discriminate such inner stimulus-patterns, in order to insure appropriateness and communicativeness of the designations to be made. The too crass behaviorist, in his condemnation of intro-

spection, has blindly condemned or denied the process by which he himself is able to comprehend the motives of others, and many sources of self-knowledge as well. On the other hand, the introspectionist himself has had none too clear an idea of what he was about and of how he was able to carry on. The much condemned "arm-chair psychology" has not yet made its full contribution to our knowledge of mental life; and objective, laboratory experimentation must forever depend upon arm-chair effort really to interpret its findings. Mental life does not consist in graphs and mathematical correlations. These are at best but statistical organizations of data as concentrated points of procedure for that implicit, arm-chair rehearsal by which interpretations are patiently worked out.

Our conclusion regarding the nature of consciousness may be objected to, on the ground of the etymological control employed in reaching it. It may be objected that we to-day know far more about consciousness than did that old-time originator of its verbal designation. I trust I have already shown this to be the case. But what specific facts will any one add that the term, as he apparently employed it, fails to cover? I have been acting upon the principle that before we can make dependable interpretations of a fact we must be able to bound that fact on all sides and must keep the discerned boundaries specifically in mind while making the interpretations. Perhaps I myself have failed at point after point in holding to the principle; but the method intended to be employed I believe will hold good wherever a corresponding cue to control can be found. It is a fact that *any* word, *any* pattern of vocal sound, *can be made* to designate *any* kind of fact. But this kind of fact must first be individuated, before the designation can be employed as a reliable means of social communication. And this must be held to its relationship to its own kind of designate, not be ignorantly, lazily, or surreptitiously employed for some other. The function of language is not that of mere self-expression; it is that of social communication and mutual understanding. The first duty of the user of language is to make himself understood. This means that our designates must be most specifically delineated and indicated in all possible details. Only so will their socially common designations have statistically homologous meanings for us all, howsoever different interpretative meanings we may devise for them.

V

A final word on some popular metaphysics of the case and I am done. First, there is a rather common notion that we can render into knowledge terms the ultimate character or actual stuff of the physical world. Thus the man in the street often supposes that some

super-microscope or other super-aid to our receptors may reveal to us the actual stuff of our physical world. A more sophisticated case is the Berkeleyan notion that physical objects are clusters of sensations or qualities, and that these constitute the content of knowledge. On the contrary, however, all that our receptors ever reveal to us is similarities and differences of statistically classifiable events as differently patterned stimuli integrate with our receptor structures. Our *knowledge* of these consists in respectively different patterns of reactions to them. But a reaction is never a literal rendering or reproduction of its stimulus, or of the pattern of stimulus-receptor events. Our knowledge or explanation of red is not itself red. The knowledge of things can never give us those things as they are "in themselves." The function of knowledge is to furnish us with the patterns of behavior of our own nature and of the world about us, to the end that we may achieve a continuation of that kind of existence that we are—human-kind, which must continuously result in making us different from what we are, if our kind is to continue to exist.

I have spoken of two types of current knowledge-interest as "infantile" or "childish." A really adult knowledge-interest is one having regard for consequences, as it regularly is in practical life, even in that of the authoritarian seeking to maintain his authority and prestige. It is a forward-, not a backward-looking interest. In its most practical sense of all it consists in a regard for consequences in their bearing upon the prospect of a continuance of our kind. It consists in regarding the racial life as a space-time reality whose nature is to go on, and in considering how we may so live and behave as to assure its continuance. It is here that the "practical" of pragmatism must find its meaning. Evolutionary science has thus far given us a gross view of an illimitable past experience of continuous change. Evolutionary social engineering will proceed by trying to make the racial future equally illimitable. And philosophy will sit critically in judgment upon the interpretations and uses made of scientific findings, and upon the measures taken with reference to this racial end.

Second, there is prevalent at present altogether too naïve a view of the graphs, correlations, and mathematical formulæ by which scientific data are organized. Neither are these a literal rendering of the reality which they represent. They are descriptive designations of what science is finding out about human and extra-human behavior. In so far as they are descriptively correct, they are but cues for interpretations to be made and hence for adaptations to be effected. We may not all agree in the interpretations. Therein lies the hope of mutual rational growth and of democracy. When our

scientists themselves have really mastered their own findings, they will find themselves able to state these in terms intelligible to the common man. Their own principles of "simplicity" and "parsimony," if justified in the nature of things, promise this in plainest terms. When we have cleared away the mythical and metaphysical rubbish that our long period of infancy and childhood has accumulated, we shall have more faith to believe this, and a more adult courage to live that faith.[2]

ORLAND O. NORRIS.

MICHIGAN STATE NORMAL COLLEGE.

THE END OF A GREAT LEGEND

DAS also war des Pudels Kern! I could hardly trust my eyes when I read Professor Miller's answer[1] to the first and chief of my "point blank questions," and even now can hardly believe that there was nothing more behind his magnificent denunciations of the moral turpitude of the will to believe than he now confesses. But I am delighted to hear how little substance there is to his objection and to take his word for it that there was nothing more to it. To me his explanation means relief from a great oppression, and to the history of philosophy the end of a great legend.

I

For it is now as clear as daylight that the whole core, basis, ground, reason, and justification of Professor Miller's polemic against James was an opinion he held (but never until now explicitly avowed) about the "usual" meaning of the word "belief." According to Professor Miller, the unpardonable sin of James's doctrine consists in its appealing to experience in order to bear out a will to believe. For "belief" is so absolute and final in its nature that it rules out all appeal to experience. "*In so far* as we believe we are *not*[2] leaving the proposition to be verified by future experience, and *in so far* as we are leaving it thus an open question we are not *believing*[2] it. I did not enter into this . . . because it seemed sufficiently implied. The will to believe, in the exact measure in which it exists, is the will *not*[2] to await the decision of future experience. There can certainly be no objection to the appeal to empirical verification; the objection is to the Will to Believe." Thus "the will to believe" is one thing and "the will to adopt and test hypo-

[2] A discussion of the qualitative aspect of consciousness will follow in another paper, Vol. XXVI, No. 3.

[1] This JOURNAL, Vol. XXV, p. 378.

[2] P. 379, italics mine.

theses'' is another and utterly different. We may talk of ''a hypothesis awaiting the pragmatic test,'' but it is *verboten* to use the phrase ''will to believe'' in such a context.

Whoever, therefore, attempts to verify empirically what he is willing (or anxious) to believe simply contradicts himself. Because of this implicit self-contradiction James's doctrine of an anticipatory willingness to believe, corroborated, confirmed, and verified by subsequent experience, is simply inadmissible.

With this beautiful example of intellectualistic ratiocination Professor Miller has (at last!) made his point, and the issue, perfectly plain. But he appears to me to have greatly overrated the intelligence of a generation of philosophers (and certainly mine!) in thinking that he had from the first ''sufficiently implied'' it.

II

Such being Professor Miller's explicit doctrine, with all the ellipses expanded into full circles, how shall it be met? Simply, I think, by an ''analysis'' (of which Professor Miller seems to think me incapable) of the word ''belief.'' For reasons which will presently appear, I do not in general think that verbal analysis usually advances the discussion of philosophic problems; but as Professor Miller has made it his ultimate court of appeal in the present instance, I am quite willing that to Caesar he shall go.

Let us, therefore, scrutinize the usage of the word ''belief.'' Let us ask whether ''there is a usual sense'' of ''belief.'' I answer, confidently, No, there is not: there are *many* senses of ''belief'' in use. Belief is a popular word, which, until recently, philosophy had disdained to scrutinize, and hardly noticed. It is habitually used in many senses which shade off and run into each other in ways most exasperating to lovers of exact definitions.

But it may well be that it is these, rather than popular usage, who are in error. They have not observed that ''belief'' exhibits a plurality of senses, because this is the normal condition of popular terms. Nor that such is the usual condition also of philosophic terms, which are all the more deceptive because they pretentiously lay claim to an exactness they can not, in fact, make good. Nor that *all* words are potentially ''ambiguous,'' i.e., that they may all develop *new* meanings in use. Actually the pragmatic controversy has conduced greatly to reflection on ''belief,'' and to the development of its meaning. It has drawn attention to the indefiniteness and ambiguity of the word, and to the many subtle questions of psychology and logic involved in its uses. I have myself endeavored to indicate and classify some of these in my *Problems of Belief*.

But it is evident that all these questions would be violently burked,

if any single usage were to be selected as "correct," and the rest to be tabooed. The suggestiveness and fertility of the study of belief, alike for psychology and for logic, would thereby be destroyed. It would become improper to trace the gradual growth of conviction, in psychological research, and the gradual strengthening of evidence and the subtle transitions from hopes and desires to postulates, and from postulates to "axioms," in logical research. And the arbitrary and bigoted dogmatism of the attempt would after all be vain. For verbal meanings can be fixed only by convention, by the consensus of extant authorities, and their *successors* can at any time upset them, and often do so needlessly.

The search for "*the* sense," or the usual or standard sense, of terms in philosophy is really as antiquated and unmeaning as the search for *the* place and *the* motion of a body and *the* time of an event has been rendered by modern physics. In philosophy also we should realize that the senses used must be relative to the problems to be solved, and no prejudices engendered by *past* uses should be allowed to block our way.

It is with considerations of this sort that I should justify my refusal to endorse Professor Miller's attempt to narrow down the meanings of the word "belief." The word *is* used to cover the whole gamut of psychological dispositions, from the most tentative and hesitant velleities of thought and the faintest impulses to entertain ideas, to the firmest and most ineradicable convictions to which human nature can attain. It *ought* to be so used, because in no other equally vivid and convenient way can we intimate the connections between all these psychological states, and bring out the fact that belief is essentially capable of more and less, and is something that can grow and fade. It *must* be so used, if James's doctrine of the will to believe is to be understood at all. For it seems to be quite certain that James would have repudiated Professor Miller's terminological proposal and the technical objection based on it even more energetically than myself, if Professor Miller had succeeded in making his meaning clear to James. I would remind him, therefore, that to establish his point it is not enough for him merely to express his opinion as to what the word "belief" should mean and how it ought to be used; he has to get his usage accepted by others. In particular he has to show that James was cognizant of his usage, and would have adopted it, if it had been put to him; nay more, that it is necessarily presupposed in James's doctrine. This last would probably prove the most desperate undertaking of all. For it is pretty evident that James had no thought of creating an antithesis between a "hypothesis" and a "belief," and of restricting "belief" to states of mind so impervious to experience that nothing could modify them. He would have defied

Professor Miller to show that such states existed, and contended that verificatory experiences were relevant, alike to the psychological survival and to the logical value, of *all* beliefs.

Clearly, then, James's actual doctrine of the will to believe is not touched by Professor Miller's technicalities. It can not be disposed of by laying down an artificial and arbitrary sense of "belief." This restriction upon current uses can not, and should not, be adopted by pragmatists, and is historically false to James's meaning.

III

The rest of Professor Miller's article calls for little comment. He is no doubt correct in stating that he never requested James to reply to his attack, and my impression to the contrary may very well have been produced, not by anything *he* told me, but by what I gathered from James or Rutgers Marshall. After thirty years the human memory can not claim infallibility in such matters. But I distinctly remember that at the time he seemed to me to have strangely ignored the empirical factor in James's doctrine, and conceivably to have understood James better than I had. I now perceive, of course, that I was mistaken, and that he had stated his real objection so implicitly that neither James, nor I, nor any one else (so far as I know) had made it out. Any how it is a fact of my psychological history that Professor Miller's article (as *I* understood *it*) proved a great stimulus to me in developing what seemed to me the neglected empirical implications of James's doctrine. Moreover, Professor Miller does admit (p. 380) that he *did* ask Marshall and me to reply to him; and that, surely, is logically the important point. For it led to my writing, not merely an article, but *Axioms as Postulates.*

For the rest I cordially agree with Professor Miller's view that there are "morals of the mind" and ethics of controversy, and that philosophers habitually neglect them, to the great damage and discredit of philosophy. But it seems to me that *our* controversy has constituted an exception and a shining example. We have asked, *and answered,* point-blank questions, and have solved "a tormenting puzzle" in the history of philosophy which must have intrigued others besides myself. It only remains for us all to thank Professor Miller heartily for the explanations he has so kindly given. But why, oh why, could he not have given them thirty years ago, or even a year or two ago, when our discussion started? It would have been such a relief to many worthy philosophers to learn that the unspeakable depravity of the Will to Believe consisted merely in a refusal to adopt Professor Miller's opinion as to a technical sense to be given to the word "belief"!

F. C. S. SCHILLER.

CORPUS CHRISTI COLLEGE, OXFORD.

BOOK REVIEWS

Common Principles in Psychology and Physiology. JOHN T. MACCURDY. Cambridge: At the University Press. 1928. Pp. 284.

Ultimate philosophical problems need fear no long neglect. When their father (the scientist) and their mother (the metaphysician) forsake them, the psychiatrist will take them up. Mr. MacCurdy regrets that psychologists are not in close accord and that physiology has a materialistic bias. He makes a mental hygiene effort to correct both defects by advocating a particularly loose way of using terms. The technique is that of the "word salad," which the author describes on an early page as giving "special meanings to a series of words; the personal, individual meanings alternate with those in current use so that the same word may be used in quite different senses even in one sentence." The particular words played upon by Dr. MacCurdy are "image" and "pattern." Of these, more later.

First it is instructive to see concretely how consistent the author is in his passion for the loose use of words. Take, for example, his use of the word "consciousness,"—a rather important symptom to observe in the case of anyone aspiring to put the psychological world in order.

Consciousness on p. 52 is "a capacity to discriminate between stimuli arising in the present environment and stimuli occurring as reproductions or elaborations of past experience." On p. 50 it was something that can "interact with images." On p. 76 it is not mere "capacity to discriminate,"—it is something which may or may not be stable and which can "correlate a goal image with the combined subsidiary reactions." On p. 130 "consciousness steps in to solve a problem" and in the next line "the problem is created by the personality, by consciousness." On p. 127 consciousness is a place into which "images" may be "brought." On page 118 consciousness is an attribute of "mental processes," which may be "conscious or unconscious." In the same paragraph consciousness is something that has "efficiency" and also a place or state into which mescalin can "bring processes normally co-conscious." On p. 102 "affect is the effect in consciousness of a flux of image functions that is proceeding co-consciously," and in the next sentence consciousess is an agent which "had insufficient material to work with." At the bottom of p. 91 "consciousness" is a synonym for awareness"; at the top of the page it is something that has "fringes"; in the middle of the same page "conscious awareness" suggests that there may be other kinds of awareness, and that consciousness and awareness are not synonyms. On p. 103 the puzzle is complicated, for "awareness" is a field where "external stimuli" may be. On p. 75 "consciousness" is the whereabouts of a "relation." And so on endlessly.

The reader who can see how consciousness is at one and the same time, and for the same thinker, a capacity, an agent, an attribute of mental process, a problem solver, identical with personality, synonymous with awareness, a mere discriminator of images, a place where images, relations, and affects may occur, and also a place where external stimuli may occupy the focus, will be eager to follow the author in his crusade to systematize psychology and harmonize it with physiology.

This, as we have said, is done by playing on the words "image" and "pattern." The fundamental observation, with which Dr. MacCurdy is much impressed, is the familiar fact that acts may come to follow slight details of their earlier and more complex antecedents. For the author it is not enough to describe this effective action of cues. The whole original antecedent must be present in some form. But it eludes observation. When Pavlov's dog secreted saliva in response to the bell, the earlier food stimulus, it is apparently felt, must have been present again, in *some* fashion, or else why should the dog have so behaved.

Since the original complexity is not present as objective fact nor as conventional subjective image, in these cases of reaction to cues, it is supposed by the author to be active as "image function," or as "pattern," as an "immaterial" agent. These conjectured "immaterial" powers intrigue him throughout the volume. Being immaterial they are said to be indestructible. They have beginning, but no end,—a novel mode of eternity. Patterns are not merely the "form" which things *take,* they are instead the effective powers which make things take the form they do. They are the "formal causes" of the ancients, resurrected in Cambridge.

Since it is true that mental life may be neatly described in terms of the reduction of stimuli to smaller and finer details of original complexities which exist only in history, MacCurdy can apply his "ghost" doctrine through a series of the conventional chapter headings. His error lies in supposing that the conjectured ghosts do the work, rather than the reduced and attenuated cues that constitute the observable stimuli to action. Of course it *is* remarkable that such reduced cues can be effective, but not a bit more remarkable than the fact that the former stimuli, of much greater complexity, could do so. Who would ever have dreamt that vibrations of a given frequency, falling on the retina, would arouse a "sensation of yellow"!

Mr. MacCurdy would presumably say that since, when an attorney "acts for" his client, the judge acts quite as he would if the client himself were there, the client himself must be present *in some form.* But what form? Well, since in neither material nor

observable form, he must be present as image, as pattern, as guiding immaterial agency, or else the attorney could not so effectively *represent* him.

Turning to physiology, embryology, and growth, the author again plays on the words "image" and "pattern," with "designs" as a useful equivalent. Patterns are shown to be the real determiners of whatever develops in a patterned fashion. Since they are immaterial, no operation on the nervous system can destroy them. Furthermore, since these ghostly "guiding agencies" have been called "patterns" and "images" in both the psychological and physiological sections of the book, it is intimated that the two fields have now been brought together in terms of common principles. This is, of course, the point where the technique of the "word salad" operates. In this way we can bring together the most incongruous topics. Take agriculture, poetry, and cabinet making. In all three there are "things that have feet." Call them "images." Recognize that they are present, but unobservable, are born, but can not die, and you have brought order out of acrimony.

The book is an interesting example of what is likely to happen when the new physics, with its emphasis on relations and systems, and the new psychology, with its emphasis on mnemic facts, conditioning, redintegration, substitute stimuli, and *Gestalten,* get to churning together. One way to settle down is to take a simple positivist attitude toward all the observed facts, making few conjectures. Mr. MacCurdy is obsessed, however, by a materialistic bias, and can not use this solution. He can not really believe that slight cues can ever function in place of their former complex contexts, which now exist only in history. The past context must, he feels, still "be here" in some form. Rather than deny this materialistic dogma he introduces the "formal cause" in the guise of a ghost, a pattern without substance, a relation without terms, and endows it with "power."

No adequate brief review is possible of the numerous topics the author introduces, in a beguiling manner. Part I considers many general psychological themes—as intelligence, interest, attention, perception, meaning, recognition, recall—always in terms of the conjectured "immaterial pattern" instead of in terms of the identifiable stimuli and the biography of the individual. Part II introduces a heterogeny of topics, such as spinal shock, inhibition, strychnine poisoning, epigenesis, development of nervous system, growth of specialized tissue. This section seems to the reviewer (who is not a physiologist) to be full of suggestive insights and observations, parallelisms, and the like.

In both general fields a set of "pattern laws" is developed and illustrated, using the bizarre terminology of images, liminal images,

patterns, and designs. How the physiologist will react to the exposition, if at all, the reviewer can not guess. Psychologists have much simpler formulations of the observed facts than those here advocated, and it is doubtful whether they will accept reconciliation at the cost of adopting the "word salad."

But MacCurdy's exposition is so direct, so eager, and so ambitious in its scope, that it will prove a stimulating piece of literature to students already inclined toward a materialistic mysticism.

H. L. HOLLINGWORTH.

COLUMBIA UNIVERSITY.

Essai Critique sur l'Esthétique de Kant. VICTOR BASCH. Paris: J. Vrin. 1927. Pp. L + 634.

The first edition of this well-known work, published in 1897, has long been out of print. The author tells us in a preface to this second and enlarged edition that when the question of reprinting the book arose, he found himself faced by a choice between rewriting the whole work in the manner which his judgment to-day, and the works of others since published on the same subject, would dictate; and reprinting the original work substantially as it was, in spite of shortcomings which he deems it to possess. His decision in favor of the second course was taken partly in view of the immense labor which the first would involve, partly because that second course preserves instead of destroying the individuality of a book which has won warm friends, and partly because both the criticisms of Kant and the solutions of the difficulties pointed out, in the first edition, still essentially represent the opinions which he holds to-day.

In the new edition, however, Professor Basch has added to the Introduction a valuable study of the historical origins of the esthetic views of Kant, which he had left out of the first edition, and which is a résumé of a long unpublished work on the subject. The outcome of that historical study is "that the *Critique of Judgment* is throughout rooted in the esthetic researches of the French, English, and German thinkers of the eighteenth century, and that its principal merit is to have coördinated and synthesized them. Not only had most of the problems dealt with by Kant been raised before him, but also most of the solutions he adopts had been proposed" (XXV).

The author's general contention with regard to Kant's esthetic theory is essentially as follows. He points out that at the time Kant wrote the *Critique of Pure Reason,* he believed that no criticism of taste was possible, for in a note justifying his use of the name "Transcendental Esthetic" in that book, Kant says that the term "criticism of taste" implies a false hope of bringing the critical judgment of the beautiful under rational principles, and of raising its rules to the rank of a science. But such endeavors are vain:

"the sources of the rules or criteria of the Beautiful being empirical, they never can serve as *a priori* laws appropriate to guide taste in its judgments; it is much rather taste which is the true touchstone of the correctness of the rules." By the time he came to write the *Critique of Judgment,* however, his opinion as to this had changed; and already in 1787, in the second edition of the *Critique of Pure Reason,* he had modified the note just quoted. The rules of taste are there said only to be empirical in their *principal* sources, and only to be incapable of serving as *determinate a priori* laws. The originality of the Kantian esthetics, Professor Basch declares, then "consists precisely in having made the problem of the Beautiful enter the realm of Criticism—in having subordinated it to the great problem which Criticism attempts to solve, viz., that of knowing whether there are in us synthetic principles *a priori.*"

This question, asked concerning the realm of the Beautiful, gives rise to a paradox which Professor Basch thinks Kant has not resolved. It is as follows: On the one hand "Kant concedes . . . that the Beautiful provokes in the spectator not a logical judgment, but a feeling; that in the presence of the beautiful we do not cognize; but are conscious of a favorable and harmonious activity of our faculties. . . . On the other hand . . . no philosopher has so profoundly as Kant separated the realm of sensibility and that of the Understanding"; and in Kant, the reason for this separation is that "Sensibility, even as a source of cognition, can not furnish us any but individual data, particular and contingent; and that only the Understanding—cognition properly so called—contains elements without which all thought is inconceivable, and which in consequence may legitimately claim to be universally and necessarily shared. But the realm of the Beautiful is not even that of Sensibility *qua* inferior source of cognition, but properly that of only affective sensibility, i.e., of pure and simple receptivity, which, by definition, is irreducibly subjective and individual. Thus, on the one hand, there can be criticism of taste only if feeling, too, contains synthetic *a priori* elements, and on the other hand, the whole philosophy of Kant tends to reserve the *a priori* for cognition, and to exclude it absolutely from feeling" (xli).

At all events, such being the terms of the problem, the first task of the *Critique of Judgment* would have been to prove that there are *a priori* principles also within the realm of feeling. But Kant nowhere attempts such a proof; nor indeed does he give the analogous proofs in the case of the *Critiques of Pure* and of *Practical Reason.* "At bottom, Kant has never emitted the least doubt of the existence in us of the *a priori,* and that is truly the reason why he has never felt the need of proving it. The point of departure of the whole

Kantian philosophy is dogmatic and not critical. . . . Kant's critique deals, in fact, only with the value and the scope of the forms of cognition: the question of their existence, he has not even occupied himself with." It is true that their existence can not be proved, but only postulated. Nevertheless, we have the right to reproach Kant with "not having expressly confessed that it is with acts of faith that must begin any theory of knowledge, any ethics, and any esthetics." The Kantian philosophy does not merely issue in postulates, but begins with postulates, or rather with imperatives. It commands men to admit having in them elements of knowledge not derived from experience; and, in the realm of esthetics, it "orders them to have identical feelings."

One may plausibly contend that without such "imperativism," science and ethics would be inconceivable; but in the realm of taste there are no such imposing critical structures as science and ethics, to demand or to justify a similar imperativism. Kant himself "affirms, with the utmost energy, that in matters of taste, it is always the spectator's individual feeling which decides in ultimate resort." His method is therefore not at all psychological, as distinguished historians have maintained. "It begins by affirming what is in question, viz. . . . that there are *a priori* principles of feeling analogous to those of cognizing and desiring, and it then asks itself how, i.e., on what conditions, these principles are possible. It is because there *must* be *a priori* principles of taste, that Kant imagines the Reflective Judgment" and the various characters of it.

Professor Basch's own view is that there are no such *a priori* principles of taste, and that judgments of taste are ultimately based on nothing but individual feeling. The science of the Beautiful is therefore an empirical, psychological science. Accordingly, he first investigates feeling from the simplest case of it to the highly complex case constituted by the feeling of Beauty. He analyzes the latter and finds its elements to be three,—one sensory, another directly or formally intellectual, and a third consisting of associated elements. He then unites these three factors and reduces them to "a feeling of peculiar sympathy" which he calls "sympathetic symbolism, that is to say, the faculty of letting go of one's own self, and of vibrating in unison with the displays of nature and of art" (xlviii).

In view of the wide recognition that Professor Basch's *Essai* has won, it is perhaps superfluous to say here that it is a masterly piece of work. There is apparent in it throughout an extraordinary combination of wide erudition, thoroughgoing scholarship, acute critical power, and vigorously constructive thought. Moreover, almost everywhere through its pages the reader has reason to be

grateful for a style which is admirably cogent, lucid, entertaining, and trenchant. It is to be hoped that, with the growth of interest in the philosopy of art at present discernible in this country, there may soon be available an adequate translation of a work the importance of which in many ways extends far beyond the limits indicated by its title.

C. J. DUCASSE.

BROWN UNIVERSITY.

The Fundamentals of Human Motivation. LEONARD T. TROLAND. New York: D. Van Nostrand Co. 1928. Pp. xiv + 521.

A bachelor of arts untouched by pedantry once reported that he divided his college work into Aristotle courses and amœba courses: they all began with one or the other. The author of this book is not so limited in scope. Students of the nature of things from Heraclitus to Kretschmer pass in review, so that present-day theories are not allowed the appearance of novelty suggested by their proponents. Physiological structures from the nerve cell to the cortex are examined for what light they can throw on the problem treated. Anthropology and sociology testify that the behaving man is no solitary creature without a past. And contrary to all precedent, not only is the calculus brought forward, but also, out of the author's experience as research engineer in the fields of chemistry and physiological optics, the electron and the proton.

In spite of this breadth of scholarship, this rich scientific background, the book will make enemies,—especially among the bitter-enders. It will make enemies of some philosophers because it wholeheartedly embraces the doctrine of psychophysical parallelism. The author is quite aware of the limits of the popularity of this position when he says (pp. 75–76): "It has aroused severe intellectual pains in philosophic minds, thus stimulating many a violent reaction against it. . . . Behaviorists and exclusive physiologists turn their thoughts away from the mental side of the parallelism, in an endeavor to avoid recognition of its obnoxious features. Idealists and exclusive introspectionists find unity in a shut-in mentalism. Interactionists, and blurry thinkers in general, scoff at the scheme as an academic creation, and mix physical and psychological notions at random."

The behaviorists are deliberately taunted (p. 256): "If we examine the behaviorist's position . . . we find that its justification can really only be based upon a plea of intellectual incapacity on the part of the behaviorist himself." Similarly the Freudians (p. 255): A devotion to introspectively or psychologically conceived notions would lead us "to flounder in a slough of vague ideas after the fashion of most of the psychoanalysts."

It will make enemies of some students of ethics because the doctrine of motivation expounded is based upon a psychological hedonism, and because the author looks forward to the day when the problem of ethics, "the most important one with which the human mind is faced," will be studied by scientists using the methods of science. It will make enemies of anti-Spencerian biologists because his concept of purpose is flanked on the one hand by his hedonistic doctrine and on the other by that of biological utility, which latter, he has to confess, is often quite lacking. Even the reader unallied with any school, if he is pressed for time, will perhaps wish that the book had been compressed to something less than its xiv + 521 pages, and that the familiar terms had been used instead of such mintings as "retroflex action," "beneceptors," "nociceptors," and "entegration."

These terms, however, in the end prove a convenience, though they give the impression at first of furnishing merely terminological variants of existing theories. Great praise is due the author for the spirited way he sails into the troubled waters of psychological discord, dealing not alone with the mechanism-dualism dispute already referred to, but with others as well, some related to it, like the problem of instinct, of desire, and of purpose; some of a more distant nature, like the insight-*vs.*-trial-and-error controversy.

And seeking to give harmony to them all is the author's theory of motivation based upon the "degree of conductance" which is derived not only from use and disuse, but from the pleasure-pain senses. The pleasure senses (beneceptors) are associated with conditions which are beneficial to the organism or species, whereas the pain senses (nociceptors) are similarly related to injurious conditions. The stimulation of the one augments the conductances or cortical pathways; the effect of the other is their diminution. The opposed processes are forms of retroflex action, which may be conditioned in the usual manner. Pleasantness accompanies an increasing conductance, while unpleasantness goes with the process of decrease. A large section of the book is given to an application of these principles to various matters such as novelty, falling in love, modern interests, personality and character.

Of course this brief summary does not do the book justice, either in the matter of the presentation of modern viewpoints or in the development of the author's theory. All but the extremists will welcome a volume which so fairmindedly and with such commendable scientific insight works toward a solution of some of the vexed problems of human motivation.

WM. CLARK TROW.

UNIVERSITY OF MICHIGAN.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. Vol. XXXVIII, 1. Real and Ideal Relations: *H. W. Carr.* Sense Qualities and Material Things: *S. P. Lamprecht.* The Essential Distinction between Science and Philosophy: *J. E. Turner.* Metaphysical Implications of Human Association: *H. W. Wright.*

INTERNATIONAL JOURNAL OF ETHICS. Vol. XXXIX, 2. Freedom as Fact and Criterion: *F. H. Knight.* Emergence and Intelligibility: *G. W. Cunningham.* The Morality of African Races: *E. Torday.* Emerson in His Period: *P. H. Boynton.* What is Man?: *M. C. Otto.* The Ethics of Giovanni Gentile: *V. B. Evans.* The Significance of William Blake in Modern Thought: *W. F. Clarke.*

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY. Vol. VI, 4. Determinism and Ethics: *John Anderson.* Christianity: The Religion of Jesus of Nazareth: *F. E. Brown.* An Hypothesis concerning the Relation between Body and Mind: *C. I. McLaren.* Vitalism: *M. W. Crookes.* A Plea of an Unnatural Morality: *T. Jasper.* New Wine in Old Bottles: *Richard Lawson.* Psychological Clinic for Children: *T. A. Hunter.* An Experimental Study of the Concept: *W. J. Weeden.*

SCIENTIA. Vol. XLV, N. CCI–1. La scienza nel secolo XVIII: *G. Loria.* Die Kontinuumsauffassung in der Physik: *E. Lohr.* The Nervous Impulse in Plants: *J. C. Bose.* Le retour au droit naturel. Son rôle dans la conception actuelle du droit international: *L. Le Fur.*

THE NEW SCHOLASTICISM. Vol. III, 1. The *Questiones* of Cardinal Stephen Langton: *G. Lacombe.* Reflections on Perception: *P. J. Bart.* The Influence of Mediaeval Philosophy on the Intellectual Life of Today: *M. Grabmann.* "Self-Realization" in Ethics: *C. C. Miltner.* Chronicle—Pour l'Histoire de la Philosophie Mediévale: *M.-D. Chenu.*

JOURNAL DE PSYCHOLOGIE. XXV^e^ Année, No. 8. L'expression de la pensée en chinois: *M. Granet.* Sur le caractère psychologique des changements phonétiques: *A. Sommerfelt.* Les fondements psychologiques de la religion et l'extase: *O. Raknes.* Essai sur la structure des états de dépression presbyophrénique: *E. Minowski* et *M. Tison.* Les rêves de vol: *J. M. Lévy.*

Bruni, Gerardo: Progressive Scholasticism. Authorized translation from the Italian by John S. Zybura. (A Contribution to the Commemoration of the Fiftieth Anniversary of the Encyclical "Aeterni Patris.") St. Louis: B. Herder Book Co. 1929. xxxv + 185 pp. $1.75.

Gaskell, Augusta: What is Life? With Introductions by Prof. K. T. Compton and Prof. Raymond Pearl. Springfield, Illinois: Charles C. Thomas. 1928. 326 pp. $3.50.

Hertz, Robert: Mélanges de Sociologie Religieuse et Folklore. (Bibliothèque de Philosophie Contemporaine.) Paris: Félix Alcan. xvi + 252 pp. 35 frcs. (Représentation Collective de la Mort; Préeminence de la Main Droite; Saint Besse; Contes et Dictons Recueillis sur le Front; Sectes Russes.)

Robinson, Daniel Sommer: An Anthology of Recent Philosophy. Selections for Beginners from the Writings of the Greatest Twentieth-Century Philosophers. With Biographical Sketches, Analyses, and Questions for Discussion. New York: Thomas Y. Crowell Co. 1929. xi + 674 pp. $4.00.

Shapley, Harlow, and Helen E. Howarth: A Source Book in Astronomy. (Source Books in the History of the Sciences, Gregory D. Walcott, General Editor.) New York: McGraw-Hill Book Co., Inc. xvi + 412 pp. $4.00.

Baar, J.: Psychology (for Reviews). Introduction by C. J. Warden. New York: Globe Book Co. 1928. vii + 26 pp. $1.00.

Flexner, Abraham: The Burden of Humanism. (The Taylorian Lecture, 1928.) Oxford: At the Clarendon Press. New York: Oxford University Press. 1928. 25 pp. 70 cents.

McWilliams, James A.: Cosmology. A Text for Colleges. New York: Macmillan Co. 1928. x + 243 pp. $2.50.

Morton, Robert Lee: Laboratory Exercises in Educational Statistics. With Tables. New Jersey: Silver, Burdett & Co. 145 + lii pp.

Rickert, Heinrich: Die Grenzen der Naturwissenschaftlichen Begriffsbildung. Eine logische Einleitung in die historischen Wissenschaften. Fünfte Auflage. Tübingen: J. C. B. Mohr (Paul Siebeck). 1929. xxxix + 776 pp. 29.50 M.

NOTES AND NEWS

At the business meeting of the Eastern Division of the American Philosophical Association, held at the University of Pennsylvania on December 29, the following officers were elected for the coming year: President, Morris R. Cohen; Vice-President, E. G. Spaulding; members of the Executive Committee for a period of three years, W. K. Wright, C. A. Bennett. Charles W. Hendel was appointed Secretary *pro tem.* during the absence abroad of Brand Blanshard. The members of the nominating committee for the coming year are: Charles M. Bakewell, Chairman; F. J. E. Woodbridge; Frank Thilly.

THE JOURNAL OF PHILOSOPHY

There is no similar journal in the field of scientific philosophy. It is issued fortnightly and permits the quick publication of short contributions, prompt reviews, and timely discussions. The contents of the last six issues are as follows:

Volume XXV. No. 22. October 25, 1928.

The Scientific View of Life. RALPH S. LILLIE.
Book Reviews. Journals and New Books. Notes and News.

Volume XXV. No. 23. November 8, 1928.

The Status of the Data of Experience. JOHN B. KENT.
Purpose in the Doctrine of Contradiction. CHARLES M. PERRY.
Book Reviews. Journals and New Books. Notes and News.

Volume XXV. No. 24. November 22, 1928.

A Theory of Perception. HERMAN HAUSHEER.
On the Relation of Appearances to Real Things. HOMER H. DUBS.
Book Reviews. Journals and New Books. Notes and News.

Volume XXV. No. 25. December 6, 1928.

Religion and the Philosophical Imagination. IRWIN EDMAN.
Substance. FREDERICK J. E. WOODBRIDGE.
Concrete and General in Art Criticism. LEO STEIN.
Book Reviews. Journals and New Books. Notes and News.

Volume XXV. No. 26. December 20, 1928.

A Behaviorist Account of Intelligence. ORLAND O. NORRIS.
Book Reviews. Journals and New Books. Notes and News.
Index to Volume XXV.

Volume XXVI. No. 1. January 3, 1929.

Wilhelm Dilthey. A Review of His Collected Works as an Introduction to a Phase of Contemporary German Philosophy.
HORACE L. FRIESS.
Book Reviews. Journals and New Books. Notes and News.

THE JOURNAL OF PHILOSOPHY

515 W. 116th St., New York City

$4.00 per annum (26 numbers) **20 cents per copy**

Directory of American Psychological Periodicals

American Journal of Psychology.—Ithaca, N. Y.; Cornell University.
Subscription $6.50. 624 pages annually. Edited by E. B. Titchener.
Quarterly. General and experimental psychology. Founded 1887.

Pedagogical Seminary and Journal of Genetic Psychology.—Worcester, Mass.; Clark University Press.
Subscription $7.00. 700 pages annually. Edited by Carl Murchison and international co-operating board. [1891.
Quarterly. Child behavior, differential and genetic psychology. Founded

Genetic Psychology Monographs.—Worcester, Mass.: Clark University Press.
Subscription $7.00 per volume. Two volumes annually, 600 pages each Edited by Carl Murchison and an international coöperating board.
Monthly. Each number one complete research. Child behavior, differential and genetic psychology. Founded 1925.

Psychological Review.—Princeton, N. J.; Psychological Review Company.
Subscription $5.50. 480 pages annually.
Bi-monthly. General. Founded 1894. Edited by Howard C. Warren.

Psychological Bulletin.—Princeton, N. J.; Psychological Review Company.
Subscription $6.00. 720 pages annually. Psychological literature.
Monthly. Founded 1904. Edited by Samuel W. Fernberger.

Psychological Monographs.—Princeton, N. J.; Psychological Review Company.
Subscription $6.00 per volume. 500 pages. Founded 1895. Edited by Raymond Dodge.
Published without fixed dates, each issue one or more researches.

Psychological Index.—Princeton, N. J.; Psychological Review Company.
Subscription $4.00. 300–400 pages. Founded 1895. Edited by W. S. Hunter.
An annual bibliography of psychological literature.

Archives of Psychology.—Columbia University Post Office, New York.
Subscription $6.00. 500 pages per volume. Founded 1906. Edited by R. S. Woodworth.
Published without fixed dates, each number a single experimental study.

Journal of Abnormal Psychology and Social Psychology.—Albany, N. Y.
Subscription $5.00. Boyd Printing and Publishing Co. Edited by Morton Prince and Henry T. Moore.
Quarterly. 432 pages annually. Founded 1906. Abnormal and social.

Psychological Clinic.—Philadelphia; Psychological Clinic Press. [1907.
Subscription $2.50. 288 pages. Edited by Lightner Witmer. Founded
Without fixed dates (9 numbers). Orthogenics, psychology, hygiene.

Comparative Psychology Monographs.—Baltimore; Williams & Wilkins Co.
Subscription $5.00. 500 pages per volume. Edited by W. S. Hunter.
Published without fixed dates, each number a single research.

Psychoanalytic Review.—Washington, D. C.; 3617 Tenth Street, N. W.
Subscription $6.00. 500 pages annually. Psychoanalysis.
Quarterly. Founded 1913. Edited by W. A. White and S. E. Jelliffe.

Journal of Experimental Psychology.—Princeton, N. J.
Psychological Review Company. 500 pages annually. Experimental.
Subscription $6.00. Founded 1916. Bi-monthly. Edited by Madison Bentley.

Journal of Comparative Psychology.—Baltimore; Williams & Wilkins Co.
Subscription $5.00. 500 pages annually. Founded 1921.
Bi-monthly. Edited by Knight Dunlap and Robert M. Yerkes.

Psychological Abstracts.—Princeton, N. J.
Subscription $6.00. 600 pages annually. Edited by W. S. Hunter.
Monthly. Abstracts of psychological literature. Founded 1927.

Journal of General Psychology.—Worcester, Mass.: Clark University Press.
Subscription $7.00. 600–700 pages annually. Edited by Carl Murchison and an international coöperating board. Quarterly. Experimental, theoretical, clinical, and historical psychology. Founded 1927.